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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,379	02/25/2004	Hyung-Joon Kim	YOU102	3388

7590 05/01/2007  
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EXAMINER
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CAMERON, ERMA C

ART UNIT	PAPER NUMBER
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1762

MAIL DATE	DELIVERY MODE
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05/01/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/786,379	<b>Applicant(s)</b> KIM ET AL.	
	<b>Examiner</b> Erma Cameron	<b>Art Unit</b> 1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 01 February 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-14 and 18-23 is/are pending in the application.
- 4a) Of the above claim(s) 18-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                                  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____   |

## DETAILED ACTION

### *Response to Amendment*

#### *Election/Restrictions*

1. a) Claims 11 and 12 have been rejoined into the application. They should not have the status of "withdrawn".

b) The applicant is reminded that on 10/24/2005, they elected steel as the metal and methyl as the R group. Therefore claims 18-23 will not be examined (the R group is not methyl).

#### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

or

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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3. Claims 1-3, 5-7, 9-11 and 13 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by JP 10-001786.

'786 teaches coating galvanized steel sheets with 1-octadecanethiol (RN 2885-00-9) or other mercaptides for corrosion protection. The coating is applied by dipping, spraying or roller. The thiol compound may either be applied over a silicic acid ester/Al salt coating, or may be applied with these compounds. The thiols are applied in butyl cellosolve (a type of glycol) or water, at 5 millimoles. The sheets do not need chromating. See Abstracts and pages 4-16 of translation.

***Response to Arguments***

The applicant has argued in the 2/1/2007 amendment that the coating must necessarily include silicic acid ester. The examiner disagrees. The silicic acid ester is an undercoating, with the octadecanethiol a separate coating on top.

4. Claims 1-3, 7-8 and 10-11 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by JP 57-198269.

'269 teaches coating by dipping (i.e. immersion for 2 seconds) a partially or wholly silver-plated stainless steel into a octadecylmercaptan solution (RN 2885-00-9) in ethanol or other organic solvents for corrosion protection. The solution is 0.01-5 weight %. (see Abstracts and pages 1-8 of translation).

***Response to Arguments***

The applicant has argued that '269 does not teach metal other than stainless steel. It is not clear how this affects the rejection of claims 1-3, 7-8 and 10-11.

5. Claims 1-2 and 7-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Reihl et al (6652669).

'669 teaches treating aluminum or Al alloy by coating with n-decanethiol in ethanol at 1 g/l (see Examples).

6. Claims 1-3 and 7-11 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Ohno et al (Hyomen Kagaku, 18(6), pp 373-379, 1997).

Ohno teaches forming a self-assembled monolayer of 1-octadecanethiol (as a 1 mM solution in ethanol) on an aluminum alloy (see Abstract).

7. Claims 1-3 and 7-11 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Ruan et al (Thin Solid Films 419, pp 95-104, 2002).

Ruan teaches forming self-assembled monolayers of octadecanethiol or other thiols on stainless steel from a 10 mM solution in ethanol (see Abstract and pages 95-96).

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 10-001786.

‘786 is applied here for the reasons given above.

‘786 does not teach that the galvanized steel was produced by electrogalvanizing, but galvanizing in general is inclusive of electrogalvanizing.

‘786 does not teach that the immersion time is 3”-15’, but it would have been obvious to one of ordinary skill in the art to have optimized the dipping time through no more than routine experimentation.

10. Claims 9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 57-198269.

‘269 is applied here for the reasons given above.

‘269 teaches that the immersion time is 2 seconds. This is close enough to the lower limit of 3 seconds claimed by applicant that the examiner’s position is that 2 seconds reads on the claimed 3 seconds. Moreover, it would have been obvious to one of ordinary skill in the art to

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have optimized the immersion time through no more than routine experimentation because immersion time is known to be an important parameter to control in a coating process.

'269 teaches that the thiol cpd is at 0.01-5%, which overlaps with applicant's claimed range of 1-500 mMolar.

11. Claims 3 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reihls et al (6652669).

'669 is applied here for the reason given above.

'669 teaches n-decanethiol. This is a homolog of the octadecanethiol of claim 3.

'669 does not teach that the immersion time is 3"-15', but it would have been obvious to one of ordinary skill in the art to have optimized the contact time through no more than routine experimentation.

12. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohno (Hyomen Kagaku, 18(6), pp 373-379, 1997).

Ohno is applied here for the reasons given above.

Ohno does not teach that the immersion time is 3"-15', but it would have been obvious to one of ordinary skill in the art to have optimized the contact time through no more than routine experimentation.

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13. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ruan et al (Thin Solid Films 419, pp 95-104, 2002).

Ruan is applied here for the reasons given above.

Ruan does not teach that the immersion time is 3"-15', but it would have been obvious to one of ordinary skill in the art to have optimized the contact time through no more than routine experimentation.

#### *Conclusion*

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erma Cameron whose telephone number is 571-272-1416. The examiner can normally be reached on 8:30-6:00, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



ERMA CAMERON  
PRIMARY EXAMINER

Erma Cameron  
Primary Examiner  
Art Unit 1762

April 27, 2007